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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,076	08/27/2001	Andrew Eric Carlson	09712-119001/Z-265	3026

7590 11/26/2002

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EXAMINER

LYONS, MICHAEL A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 11/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,076

Applicant(s)

CARLSON, ANDREW ERIC

Examiner

Michael A. Lyons

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "36" has been used to designate both a beam splitting area and a mirrored face throughout the drawings and specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: in Figure 1, no elements 18 and 22; in Figure 3, no elements 38 and 48; in Figure 5, no elements 44 and 50 (perhaps the specification is describing Figure 6?); in Figure 7, no element 44a. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: on page 8, lines 25-30, the description of the wavy and straight lines for figures 6-9 appear to be misleading. It appears from the drawings that the wavy lines denote s-polarized light while the straight lines represent p-polarized light rather than measurement and reference beams, respectively, as described in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 7 recites the limitation "said plurality of partially transmissive reflectors" in lines 1-2.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 and 8-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sommargren (4,746,216).

Regarding claim 1, Sommargren (Figure 1) discloses a multiplexer portion 16 configured to split an input beam into a plurality of intermediate beams, and a beam splitter portion 40 configured to split light onto a reference component 71 and a measurement component 70.

Regarding claim 14, Sommargren discloses a multiplexer portion on the upper half of element 16, a beam splitting layer 40, and an output coupler on the bottom half of element 16.

As for claims 2 and 15, multiplexer 16 contains a first interior face 17, a second interior face 18, with output ports 23A, 27A on the second face.

As for claims 3, 15, and 18, polarizing coating (col. 3, line 56) at the output ports acts as a beam steering element.

As for claim 4, the coating refracts the light from the primary beam into intermediate beams.

As for claim 8, the output ports also serve as reflectors to reflect part of the light beam back through the multiplexer.

As for claims 9 and 17, the reflector is an angled portion of the face as the multiplexer is not orientated either vertically or horizontally.

As for claims 10 and 19, Sommargren discloses a corner reflector 45.

As for claim 11, Sommargren discloses beam splitting plane 42.

As for claim 12, Sommargren discloses quarter wave plate 44.

As for claim 13, the quarter wave plate is also in optical communication with the measurement surface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sommargren (4,746,216).

As for claim 5, the use of a diffraction grating for a beam steering element is well known in the art.

As for claim 6, selecting an object with a particular index of refraction to refract a light beam is well known in the art.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sommargren (4,746,216).

Regarding claim 20, Sommargren (Fig. 1) discloses multiplexer on the upper half of element 16, a beam splitter 40, and an output coupler on the lower half of element 16. The multiplexer and beam splitter are not integral to one another; however, this is a matter of arrangement of parts, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the multiplexer and beam splitter integral to facilitate device operation.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. A scanning interferometer to Pond et al (4,890,921) and an optical apparatus for use with interferometric measuring devices to Chaney (5,056,921).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL
November 20, 2002



Samuel A. Turner
Primary Examiner